

## Opioid Use in Pelvic Fractures: The Impact of Opioid Prescribing Laws in Pennsylvania

### **Abstract:**

**Introduction:** The Achieving Better Care by Monitoring All Prescriptions Program Act (2014) and the Safe Prescribing Emergency Act (2016) sought to better monitor and regulate opioid prescribing in Pennsylvania. The impact of these laws in opioid prescribing practices for pelvic fractures have not been well studied. We aimed to evaluate whether there were changes in opioid use across a time period which encompassed these policy changes. **Methods:** We retrospectively studied patients admitted with acute pelvic fractures from 2015-2020, with 2015-2017 designated as the first time period (T1) and 2018-2020 as the second (T2). Daily morphine milligram equivalents (MME) were calculated. "Geriatric" was defined as  $\geq 65$  years. Primary outcome was daily inpatient MME. Secondary outcomes were long-term opioid use (LOU), opioid use 60-90 days post-discharge, and intermediate-term opioid use (IOU), opioid use 30-60 days post-discharge. Multiple linear and logistic regression analyses were performed. **Results:** A total of 277 patients (T1, n=126; T2, n=151) were included, with 23% in the geriatric group. T1 and T2 had similar baseline features. Compared to T1, T2 had a lower median daily inpatient MME (58.6 [interquartile range {IQR} 19.5- 126] years vs 78.5 [IQR 33.3-165.9] years,  $p=0.02$ ). This decrease was significant for younger patients (101.8 vs 75.8,  $p=0.02$ ) but not for the geriatric group (26.5 vs 18.2,  $p=0.056$ ). By multiple linear regression, time period was not an independent predictor for daily inpatient MME while age ( $b=-1.59$ ,  $p< 0.0001$ ) and injury severity score (ISS) ( $b=6.39$ ,  $p< 0.0001$ ) were. When analyzing IOU and LOU, only the geriatric group showed a significant decrease in IOU (30% vs 9%,  $p=0.05$ ) from T1 to T2. Pelvic fracture type (odds ratio [OR] 2.14,  $p=0.03$ ) and daily MME (OR 1.002,  $p=0.01$ ) were independent predictors of IOU while pelvic fracture class (OR 3.93,  $p=0.0006$ ) was the only independent predictor of LOU. **Conclusions:** In patients with pelvic fractures, the latter time period was associated with overall lower daily inpatient opioid use and 30-60 day opioid use in the geriatric group. As daily inpatient opioid use predicted 30-60 day opioid use, the regulation and monitoring of opioid prescribing appears to have a positive impact.

**Keywords:** Long-term Opioid Use, Pelvic Fractures, Geriatric Patients